

INDEX

- Acid phosphate—
 influence of, on active aluminum, 207-209
 utilization of phosphorus from, by corn, 9-15
- Actinomycetes, number of, in wind-blown soils, 42, 337
- Alben, A. O., See Clark, N. A., Humfeld, H. and, 291-295
- Alfalfa—
 bacteria, method of separating them from other nodule bacteria, 220
 Decomposition Studies of, and Sweet Cover Roots and Straw (paper), Thomas L. Martin, 309-316
 delayed effect of liming on the growth of, 147-148
- Allison, F. E., (paper) Nitrate Assimilation by Soil Microorganisms in Relation to Available Energy Supply, 79-93
- Aluminum—
 effect of, hydroxide on solubility of phosphorus, 268
 The Relation of Soil Reaction to Active (paper), A. W. Blair and A. L. Prince, 205-215
 The Relative, Tolerance of Crop Plants (paper), Forman T. McLean and Basil E. Gilbert, 163-175
 toxicity of, for rhododendrons, 4
- Amino acids, nitrification of, 189-191
- Ammonia—
 accumulation of, in forest soils, 360-362
 effect of partial sterilization of soils, on production of, 154-155
 nitrogen compounds, effect of, on soil reaction and active aluminum, 210
- Ammonification of fresh manure in soil, 83
- Anaerobiosis, effect of, on the precipitation of iron, 385
- Anderegg, F. O., and Lutz, R. P., (paper) A Study of Base Exchange in Soils with the Aid of the Quinhydrone Electrode, 403-412
- Appleman, C. O., (paper) Percentage of Carbon Dioxide in Soil Air, 241-245
- Asparagin, nitrification of, 193-199
- Austin, R. H., (paper) Some Reactions between Mono-Calcium Phosphate and Soils, 263-269
- Azotobacter, distribution of, in forest soils, 351-355
- Bacteria—
 Cross Inoculation with Cowpea and Soybean Nodule (paper), O. H. Sears and W. R. Carroll, 413-419
 in wind-blown soil, 39-49; 335-343
 The Fermentation Characters of the Root-Nodule of the Leguminosae (paper), I. L. Baldwin and E. B. Fred, 217-230
- Baker, W. G., See Harper, Horace J., Boatman, Bryan, and Boatman, H. L., 9-15
- Baldwin, I. L., and Fred, E. B., (paper) The Fermentation Characters of the Root Nodule Bacteria of the Leguminosae, 217-230
- Base Exchange—
 A Study of, in Soils with the Aid of the Quinhydrone Electrode (paper), F. O. Anderegg and R. P. Lutz, 403-412
 importance of H-ions in, 57
- Bases—
 absorption of, by clay, 370-371
 replaceable, in Oregon soils, 57-64
- Basic slag, effect of, on active aluminum, 208
- Batchelor, H. W., See Gibbs, Wm. H. and, 351-363
- Batham, H. N., (paper) Nitrification in Soils: II, 187-203
- Beaumont, A. B., Sessions, A. C., and Kelly, O. W., (paper) Nitrate Accumulation under a Mulch, 177-185
- Blair, A. W., and Prince, A. L., (paper) The Relation of Soil Reaction to Active Aluminum, 205-215
- Boatman, Bryan; See Harper, Horace J., Baker, W. G., and Boatman, J. L., 9-15
- Boatman, J. L., See Harper, Horace J., Baker, W. G., Boatman, Bryan and, 9-15

- Bollen, W. B., and Neidig, Ray E., (paper)
A Suggestion for Uniformity and Utility of Data in Soil Solution Analyses, 69-70
- Bradfield, R., and Cowan, W., (paper) The Effect of the Hydrogen-Ion Concentration Upon the Absorption of Calcium by a Colloidal Clay, 365-372
- Bruciae, nitrification of, 193-199
- Burt, Frederick A., (A review of his book) Soil Mineralogy, 297
- Buswell, A. M., and Neave, S. L., (paper) A Résumé of the Problem of Nitrogen Losses through Denitrification, 285-290
- Cabbage—
Some of the Factors which Influence the Composition of, and Their Relation to the Quality of Sauerkraut (paper), W. H. Peterson, H. B. Parmele, and E. B. Fred, 299-307
tolerance of, to aluminum, 167
- Calcium—
conservation of, as related to rate of liming, 484-485
effect of pH changes upon absorption of, 365-370
removal of, from various soils, 52, 477-480
replaceable, in Oregon soils, 58
- Carbon, source of, used in testing fermentation character of nodule bacteria, 220
- Carbon Dioxide—
effect of protozoa and fungi on evolution of, from soil, 152-157
evolution from soils treated with various kinds of organic matter, 310
Percentage of, in Soil Air (paper), C. O. Appleman, 241-245
sampling tube for the collection of, 242-244
- Carbon-nitrogen ratio, effect of, on nitrification of heterogeneous complex organic nitrogen compounds, 198
- Carroll, W. R., See Sears, O. H., and, 413-419
- Casein, digestion of, by soil microorganisms, 44, 338
- Clark, Norman Ashwell and Collins, Emerson R., (paper) The Quinhydrone Electrode and the Soil Reaction, 453-463
- Clark, Norman A., Humfeld, H., and Alben, A. O., (paper) Electrodialysis of Soils and the Mattson Cell, 291-295
- Clay—
content of, in soils as a measure of soil colloids, 271-273
preparation of acid, 406
Clostridium sporogenes, studies with, 386-387
- Clover—
and pea group of bacteria, method for differentiation, 223
red, assimilation of phosphorous by, 17-29
sweet,
decomposition of, roots, 309-316
rate of nitrification of different parts of, 31-38
- Collins, Emerson R., See Clark, Norman Ashwell and, 453-463
- Colloids, absorption of, by plants, 144
- Corn, fertilization of, with acid phosphate, 9-15
- Cowan, Eugene W., See Bradfield, Richard and, 365-372
- Culture solution—
absorption of phosphorus by plants from, 129-146
- Dalea bacteria, mode of reaction of, 223
- Daniloff, Kiril B., See Newton, George A., and, 95-101
- Denitrification—
losses of nitrogen through, 285-288
nitrogen losses due to, 285-290
- Donnan equilibrium—
effect of, on the concentration of phosphorus at the solid soil phase, 144
production of a, under certain conditions of pH determination, 461
- Electrodialysis—
of clay, 406
of soils, the Mattson method of, 291-295
removal of exchangeable bases by, 466-467
- Enzymes—
effect of, on decomposition of mulch materials, 182
effect of plant-root, on solubility of organic matter, 144
- Escherichia coli*, studies with, 386-387
- Fermentation characters of nodule bacteria, 217-230
- Fertilization—
Hill, Studies on the Utilization of the Phosphorus in Acid Phosphate by Corn (paper), Horace J. Harper, W. G. Baker, Bryan Boatman, and J. L. Boatman, 9-15

- Fertilizers, discussion of method of, application, 9
- Fred, E. B., See Baldwin, I. L. and, 217-230; See Peterson, W. H., Parmele H. B., and, 299-307
- Fudge, J. F., See Parker, F. W. and, 109-117
- Fungi—
presence of, in wind-blown soils, 42, 337
the effect of, on biochemical processes in soil, 149-161
- Gelatin, digestion of, by soil microorganisms, 44, 338
- Gibbs, Wm. M. and Batchelor, H. W., (paper) Effect of Tree Products on Bacteriological Activities in Soil: II. Study of Forest Soils, 351-363
- Gilbert, Basil E., See McLean, Forman T. and, 163-175
- Glucose, fermentation of, by soil microorganisms, 44, 338
- Haley, D. E., See Holben, F. J. and, 345-350
- Halvorson, H. O., See Starkey, R. L. and, 381-402
- Hardy, F., (paper) The Measurement of Suction Forces in Colloidal Soils, 71-75
- Harper, Horace J., Baker, W. G., Boatman, Bryan, and Boatman, J. L., (paper) Hill Fertilization Studies on the Utilization of the Phosphorus in Acid Phosphate by Corn, 9-15
- Heck, A. F., and Whiting, A. L., (paper) The Assimilation of Phosphorus from Phytin by Red Clover, 17-29
- Higby, H. M., (paper) Lysimeter Studies, 51-56
- Hippuric acid, nitrification of, 193-199
- Holben, F. J., and Haley, D. E., (paper) A Biological Measurement of Available Soil Potassium, 345-350
- Humfeld, H., See Clark, N. A., and Alben, A. O., 291-295
- Hydrogen-Ion Concentration—
and soluble salts in wind-blown soils, 45
effect of, on phosphorus absorption in soils, 471
effect of, on the nitrification of amino acids and other complex organic nitrogen compounds, 201
influence of different ammonium compounds on, of soils, 210
influence of, on active aluminum, 206
preparation of quinhydrone electrode for measuring the, 408
- The Effect of, on the Growth of Certain Plants (paper), W. L. Powers, 1-7
- The Effect of the, upon the Absorption of Calcium by a Colloidal Clay (paper), Richard Bradfield and Eugene W. Cowan, 365-372
- Hygroscopic coefficient, relation of, to soil type, 428-429
- Iron—
effect of, hydroxide on solubility of phosphorus in soils, 268
Studies on the Transformation of, in Nature: II. Concerning the Importance of Microorganisms in the Solution and Precipitation of Iron (paper), R. L. Starkey and H. O. Halvorson, 381-402
- Joseph, A. F., (paper) The Determination of Soil Colloids, 271-274
- Karraker, P. E., (paper) Nitrates and Wheat Yields after Certain Crops, 247-258; (paper) Production of Nodules on Different Parts of the Root Systems of Alfalfa Plants Growing in Soils of Different Reaction, 103-107; (paper) The Delayed Effects of Liming, 147-148; (paper) The Variable Occurrence of Nitrates in Soils, 259-262
- Kelly, O. W., See Beaumont, A. B., Sessions, A. C. and, 177-185
- Lignin, procedure of determining, 279-280
- Lime—
effect of, on nodule formation in alfalfa, 104
effect of, on organic phosphorus, 24
effect of rate of, application on conservation of calcium, 484-485
influence of, on active aluminum, 208
The Fate of Fractional Incorporations of Burnt, in Two Soil Zones (paper), W. H. MacIntire, 475-485
the delayed effect of, applications on growth of alfalfa, 147-148
- Liming, The Delayed Effect of (paper), P. E. Karraker, 147-148
- Lutz, R. P., See Anderegg, F. O. and, 403-412
- Lysimeter—
Studies (paper), W. M. Higby, 51-56
MacIntire, W. H., (paper) The Fate of

- Fractional Incorporations of Burnt Lime in Two Soil Zones, 475-485
- McLean, Forman T., and Gilbert, Basil E., (paper) The Relative Aluminum Tolerance of Crop Plants, 163-175
- McRuer, W. G., See Russel, J. C., and, 421-452
- Magnesium—
removal of, from soils by leachings, 55, 477-480
replaceable, in Oregon soils, 58
- Manures, The Influence of, and Organic Residues on Plant Growth (paper), George A. Newton and Kiril B. Daniloff, 95-101
- Martin, Thomas L., (paper) Decomposition Studies of Alfalfa and Sweet Clover Roots and Straw, 309-316
- Mattson cell, electrodialysis of soils by the, 291-295
- Microorganisms—
importance of, in solution and precipitation of iron, 381-402
number of, in wind-blown soils, 42
- Mint, favorable reaction for the growth of, 4
- Moisture supply, effect of soil texture on, 231-238
- Neave, S. L., See Buswell, A. M. and, 285-290
- Neidig, Ray E., See Bollen, W. B. and, 69-70
- Newton, George A., and Daniloff, Kiril B., (paper) The Influence of Manures and Organic Residues on Plant Growth, 95-101
- Nicotine, nitrification of, 193-199
- Nitrate—
accumulation during various seasons, 200
accumulation in forest soils, 360-362
Accumulation Under a Mulch (paper), A. B. Beaumont, A. C. Sessions, and O. W. Kelly, 177-185
and Wheat Yields after Certain Crops (paper), P. E. Karraker, 247-258
Assimilation by Soil Microorganisms in Relation to Available Energy Supply (paper), F. E. Allison, 79-93
nitrogen, the effect of partial sterilization on production of, in soils, 154-155
outgo of, from soils, 480-483
- Nitrates—
effect of fresh manure on soil, 81-82
effect of various organic materials on the accumulation of, in the soil, 311
- effect of water soluble nitrogen in plants on, production, 35
formation of, from amino-acids and other organic compounds, 189-203
reduction of, in sewage, 287
removal of, from soil by leaching, 53-54
the variable occurrence of, in soils, 259-262
- Nitrification—
of amino-acids, 190-191
of ammonium sulfate in the presence of fresh manure, 85
rate of, of fresh manure in soil, 83-85
The Relative Rates of, of Different Parts of Sweet Clover Plants (paper), A. L. Whiting and A. F. Heck, 31-38
- Nitrogen—
A Résumé of the Problem of, Losses through Denitrification (paper), A. M. Buswell and S. L. Neave, 285-290
ammonium, compounds, their influence on soil reaction and active aluminum, 210
content in relation to organic matter, 427-429
content in relation to soil series, 436-444
content in relation to soil type, 436-444
content of sweet clover, 32
correlation of, content to rainfall in soils, 446-450
determination of, in ring and chain compounds, 187-188
fixation of, in forest soils, 355-360
-free media for legume bacteria, 228-229
water soluble, in sweet clover plants, 34
- Openheimer, Carl (Review of his book): *Lehrbuch der Enzyme, Chemie, physikalische Chemie und Biologie*, 77
- Organic Materials—
decomposition of, from mulch coverings, 179, 181-182
The Composition of Natural, and Their Decomposition in the Soil: I. Methods of Quantitative Analysis of Plant Materials (paper), Selman A. Waksman and Florence G. Tenney, 275-283
use of different types of, as fertilizers for oats, 80-81
- Organic matter—
method for determining, in soils, 65-68
possible effect of, on phosphorus absorption by soils, 472-473
The Relation of, and Nitrogen Content to Series and Type in Virgin Grassland

- Soils (paper), J. C. Russel and Wm. G. McRuer, 421-452
- Parker, F. W., (paper) Soil Phosphorus Studies: III. Plant Growth and the Absorption of Phosphorus from Culture Solutions of Different Phosphate Concentrations, 129-146; See Pierre, W. H. and, 119-128
- Parker, F. W., and Fudge, J. F., (paper) Soil Phosphorus Studies: I. The Colorimetric Determination of Organic and Inorganic Phosphorus in Soil Extracts and the Soil Solution, 109-117
- Parmelee, H. B., See Peterson, W. H., and Fred, E. B., 299-307
- Peterson, W. H., Parmelee, H. B., and Fred, E. B., (paper) Some of the Factors which Influence the Composition of Cabbage and Their Relation to the Quality of Sauerkraut, 299-307
- Phosphate—
 colorimetric methods of Deniges and Fiske and Subbarow for the determination of both organic and inorganic, 110-111, 114-115
 limits of, in culture solutions, 131-135
 Some Reactions between Mono-Calcium, and Soils (paper), R. H. Austin, 263-269
- Phosphorus—
 loss of, by leachings, from soil, 53-54
 organic, analyses, 21-22
 organic, availability of, 123-126
 retention of, by soil colloids, 465-474
 Soil, Studies: I. The Colorimetric Determination of Organic and Inorganic Phosphorus in Soil Extracts and the Soil Solution (paper), F. W. Parker and J. F. Fudge, 109-117; II. The Concentration of Organic and Inorganic Phosphorus in the Soil Solution and Soil Extracts and the Availability of the Organic Phosphorus to Plants (paper), W. H. Pierre and F. W. Parker, 119-128; III. Plant Growth and the Absorption of Phosphorus from Culture Solutions of Different Phosphate Concentrations (paper), F. W. Parker, 129-146
 The Assimilation of, from Phytin by Red Clover (paper), A. F. Heck and A. L. Whiting, 17-29
 the chemistry of the various Ca and Mg compounds of, 263-269
 utilization of the, in acid phosphate by corn, 9-15
 Phytin, the assimilation of phosphorus from, by red clover, 17-29
 Pierre, W. H. and Parker, F. W., (paper) Soil Phosphorus Studies: II. The Concentration of Organic and Inorganic Phosphorus in the Soil Solution and Soil Extracts and the Availability of the Organic Phosphorus to Plants, 119-128
- Potassium—
 A Biological Measurement of Available Soil (paper), D. E. Haley and F. J. Holben, 345-350
 removal of, from soils by leachings, 54
 replaceable, in Oregon soils, 58
- Powers, W. L., (paper) The Effect of Hydrogen-Ion Concentration on the Growth of Certain Plants, 1-7
- Prince, A. L., See Blair, A. W. and, 205-215
- Protozoa—
 the effect of, on biochemical processes in soil, 149-161
- Quinhydrone electrode—
 and the soil reaction, 453-463
 a study of base exchange with the aid of the, 403-412
- Rhododendrons, reaction study with, 2-4
- Richmond, T. E., See Whiting, A. L. and, 31-38
- Rossmann, C. A., (paper) Retention of Phosphorus by Soil Colloids, 465-474
- Russel, J. C. and McRuer, Wm. G., (paper) The Relation of Organic Matter and Nitrogen Content to Series and Types in Virgin Grassland Soils, 421-452
- Rye straw, composition of, at different stages, 320
- Schollenberger, C. J., (paper) A Rapid Approximate Method for Determining Soil Organic Matter, 65-68
- Sears, O. H., and Carroll, W. R., (paper) Cross Inoculation with Cowpea and Soybean Nodule Bacteria, 413-419
- Sessions, A. C., See Beaumont, A. B., and Kelly, O. W., 177-185
- Silica, presence of, as a disturbing factor in the colorimetric determination of phosphorus, 113
- Skinner, C. E., (paper) The Effect of Protozoa and Fungi on Certain Biochemical Processes when Inoculated into Partially Sterilized Soil, 149-161

- Snow, Laetitia M., (paper) A Comparative Study of the Bacterial Flora of Wind-Blown Soil: II. Atlantic Coast Sand Dunes, Sandwich, Massachusetts, 39-49; (paper) III. Lake Michigan Sand Dunes, Indiana, 335-343
- Sodium, replaceable, in Oregon soils, 58
- Sodium nitrate—
alone and in combination with low N materials, 96-97
fertilization in combination with manure, 85-88
- Soil—
absorption of phosphorus from the, 141-144
carbon dioxide in, air, 241-245
Effect of Tree Products on Bacteriological Activities in, II. Study of Forest Soils, (paper) Wm. M. Gibbs and H. W. Batchelor, 351-363
measuring cohesion of the, 373-375
Mineralogy, a review of a book on, 297
Modulus of rupture of the, 375-379
organic materials, 275-283
Organic Matter, A Rapid Approximate Method for Determining, (paper) C. J. Schollenberger, 65-68
phosphorus studies, 103-146
relation of rainfall to nitrogen content of, 446-450
relative rates of nitrification in stirred and unstirred, 36-37
shrinkage of the, 379
The Composition of Natural Organic Materials and Their Decomposition in the: II. Influence of Age of Plant upon the Rapidity and Nature of Its Decomposition—Rye Plants, (paper) Selman A. Waksman and Florence G. Tenney, 317-333
The Effect of Protozoa and Fungi on Certain Biochemical Processes When Inoculated into Partially Sterilized, (paper) C. E. Skinner, 149-161
type, effect of, on composition of cabbage, 302-304
Wind-blown, A Comparative Study of the Bacterial Flora of: II. Atlantic Coast Sand Dunes, Sandwich, Massachusetts, (paper) Laetitia M. Snow, 39-49; III. Lake Michigan Sand Dunes, Indiana, 335-343
- Soil air, carbon-dioxide in, 241-245
- Soil colloids—
Retention of Phosphorus by, (paper) C. A. Roszmann, 465-474
The Determination of, (paper) A. F. Joseph, 271-274
- Soil microorganisms—
assimilation of nitrates by, 79-93
- Soil reaction—
effect of different ammonium compounds on, 210
influence of, on active aluminum, 206
relation of, to active aluminum, 205-215
The Quinhydrone Electrode and the, (paper) Norman Ashwell Clark and Emerson R. Collins, 453-463
- Soil series, relation of nitrogen content to, 436-444
- Soil Solution—
Analyses, A Suggestion for Uniformity and Utility of Data in, (paper) W. B. Bollen and Ray E. Neidig, 69-70
concentration of phosphorus in the, 119-128
determination of organic and inorganic phosphorus in, 109-117
- Soil texture, relation of nitrogen content to, 444-446
- Soil type, relation of nitrogen content to, 436-444
- Soils—
a study of base exchange in, 403-412
effect of mulching, on nitrate accumulation, 177-185
Electrodialysis of, and the Mattson Cell (paper) Norman A. Clark, H. Humfeld, and A. O. Alben, 291-295
Measurements of Physical Characteristics of, (paper) Lynn H. Stauffer, 373-379
Production of Nodules on Different Parts of the Root Systems of Alfalfa Plants Growing in, of Different Reactions (paper) P. E. Karraker, 103-107
reaction between, and mono-calcium phosphate, 263-269
relation of organic matter and nitrogen to series and type of grassland, 421-452
Replaceable Bases in Some Oregon, (paper) R. E. Stephenson, 57-64
study of forest, 351-363
The Effect of Texture of Sandy, on the Moisture Supply for Corn during Seasons of Favorable and Unfavorable Dis-

- tribution of Rainfall (paper) H. W. Stewart, 231-239
- The Measurement of "Suction Forces" in Colloidal, (paper) F. Hardy, 71-75
- The Variable Occurrence of Nitrates in, (paper) P. E. Karraker, 259-262
- wilting coefficient of, in relation to moisture content, 236-237
- Soybean and cowpea bacteria, mode of reaction of, 223
- Soybeans, growth of, in culture solution, 139
- Starkey, R. L., and Halvorson, H. O., (paper) Studies on the Transformation of Iron in Nature: II. Concerning the Importance of Microorganisms in the Solution and Precipitation of Iron, 381-402
- Stauffer, Lynn H., (paper) Measurement of Physical Characteristics of Soils, 373-379
- Stewart, H. W., (paper) The Effect of Texture of Sandy Soils on the Moisture Supply for Corn during Seasons of Favorable and Unfavorable Distribution of Rainfall, 231-239
- Stephenson, R. E., (paper) Replaceable Bases in Some Oregon Soils, 57-64
- Strychnine, nitrification of, 193-199
- Sucrose, fermentation of, by soil microorganisms, 44, 338
- Suction force, measurement of, in colloidal soils, 71-75
- Sulfate, outgo of, from soils, 483-484
- Sulfates—
loss of, from soils, 53-54
- Tenney, Florence G., See Waksman, Selman A. and, 275-283; 317-333
- Uric acid, nitrification of, 193-199
- Vetch, favorable reaction for the growth of, 3
- Waksman, Selman A., and Tenney, Florence G., (paper) The Composition of Natural Organic Materials and Their Decomposition in the Soil: I. Methods of Quantitative Analyses of Plant Materials, 275-283; II. Influence of Age of Plant upon the Rapidity and Nature of Its Decomposition—Rye Plants, 317-333
- Whiting, A. L., See Heck, A. F. and, 17-29
- Whiting, A. L., and Richmond, T. E., (paper) The Relative Rates of Nitrification of different Parts of Sweet Clover Plants, 31-38
- Xanthine, nitrification of, 193-199
- Yeasts—
infusion media for legume bacteria, 226-227
presence of in wind-blown soils, 42, 337